Contribution of Away-From-Home Foods to American Diet Quality

Eating out has become increasingly popular for Americans. In 1970, 26 percent of total food expenditure was spent away from home; by 1996, that share was 39 percent. Reasons for this trend include the growing number of women working outside the home, more two-earner households, higher incomes, smaller households, and more affordable and convenient fast-food outlets.

This study analyzes food intake survey data collected by the U.S. Department of Agriculture (USDA) over the past two decades to compare the nutritional quality of home and away-from-home foods.[1] Also, it examines how the quality has changed over time. This historical comparison shows how dining out influences specific dietary components: excessive intakes of total fat, saturated fat, cholesterol, and sodium and low intakes of fiber, calcium, and iron.

The Data: 1977-95

Individual food intakes were collected in two decennial surveys conducted by USDA—the Nationwide Food Consumption Surveys (NFCS) of 1977-78 and 1987-88. In 1985 USDA started the Continuing Survey of Food Intakes by Individuals (CSFII) for relatively small national samples. During 1989-91 three separate 1-year surveys collected information on individual food intakes from nationally representative samples. Again, in 1994-96, three separate 1-year CSFII surveys were conducted.

Data for this study were from seven year-round, nationwide surveys of individual food intakes: NFCS 1977-78, NFCS 1987-88, CSFII 1989, CSFII 1990, CSFII 1991, CSFII 1994, and CSFII 1995. The CSFII 1985-86 data were excluded because they did not represent all Americans. The first five surveys collected dietary intakes for 3 consecutive days—a 1-day recall and a 2-day record; the latter two surveys recorded 2 nonconsecutive days of food consumption. For the most accurate comparison of the seven surveys' data, only the first day from each survey was included in the analysis.

Intake data for children under age 2, pregnant and lactating women, and individuals with incomplete dietary intake data were excluded from this analysis. Sources of away-from-home food were grouped into five categories: Fast-food places; schools, camps, day-care centers; restaurants; other public eating places, including residential dining facilities, bars, soup kitchens, and meals on wheels; and other (a catch-all category, including vending machines and someone's home). Meals and snacks consisting of a combination of home and away-from-home foods were classified according to the highest caloric component.

Meal and Snack Eating Patterns

The number of meals consumed by Americans has remained stable over the past two decades at 2.6 or 2.7. Snacking, however, increased from less than once a day in 1987-88 to 1.6 times a day in

[1]Home and away-from-home foods are defined based on where foods are obtained, not where they are eaten. Home food is purchased at a retail store and food away from home is purchased mainly from foodservice establishments. Both food at home and food away from home can be eaten at home or away from home.

Table 1. Meal and snack eating patterns of Americans,[1] 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Number			
Meals per day	2.7	2.6	2.6	2.6	2.6	2.7	2.6
Snacks per day	1.1	0.9	1.2	1.2	1.4	1.5	1.6
				Percent			
Meals eaten away from home[2]	16	24	24	23	27	28	29
Snacks eaten away from home[2]	17	20	20	18	18	21	22
All meals and snacks eaten away from home[2]	16	23	23	22	24	26	27
Restaurant	2	4	4	4	4	6	5
Fast food	3	7	7	7	7	8	9
School[3]	3	2	2	2	3	2	2
Other public	3	2	2	2	2	2	2
Others	6	8	8	7	8	8	9

[1]Ages 2 and older, excluding pregnant and lactating women and those who did not provide complete dietary intake data.
[2]Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.
[3]Schools are classified as a separate category for children only; for adults, they are included in ''others.''
Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

1995 (table 1). The percentage of meals eaten away from home increased from 16 percent in 1977-78 to 29 percent in 1995, and the percentage of snacks away from home rose from 17 percent in 1977-78 to 22 percent in 1995. The increasing frequency of dining out means that Americans are getting more of their nutrients from away-from-home sources (table 2). For example, away-from-home foods provided 34 percent of total calories in 1995, up from 18 percent in 1977-78. Away-from-home foods also provided 38 percent of total fat intake in 1995, more than double the 18 percent provided in 1977-78. Thus, the nutritional quality of food away from home has become increasingly important in determining the overall nutritional quality of diets in the United States.

Nutritional Quality of Home and Away-From-Home Foods

The nutritional quality of foods was compared by using the nutrient-to-calorie density (nutrient density), which measures the amount of a nutrient or food component for each 1,000 calories of that food. For fat and saturated fat, the proportion of total calories that come from fat and saturated fat were used as measures of density.

A ''benchmark'' density was derived by dividing the recommendation[2] for a given nutrient or food component by an individual's reported caloric intake in 1,000 calories. The benchmark density represents the nutrient density an individual's diet would have to reach to meet the dietary recommendation for that caloric level. When the nutrient is consumed in amounts higher (lower) than the recommended levels, the benchmark density for that nutrient will be lower (higher) than the nutrient density. Benchmark densities vary from year to year because caloric intakes vary from year to year. For any nutrient, a higher caloric intake means less of that nutrient is needed per 1,000 calories to meet the same recommended intake level. Therefore, an increase in caloric intake means a lower benchmark density.

[2]Dietary recommendations were from the Dietary Guidelines for Americans and other health authorities.

Table 2. Consumption of selected nutrients and food components in away-from-home foods,[1] as part of total diet, 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Percent			
Calories	18	27	27	26	29	31	34
Total fat	18	28	29	28	32	35	38
Saturated fat	NA	28	29	28	31	33	37
Cholesterol	NA	26	25	25	30	32	34
Sodium	NA	27	26	26	30	32	34
Fiber	NA	22	23	22	25	26	27
Calcium	17	23	23	22	25	26	29
Iron	16	22	22	21	25	26	27

NA = Not available.
[1] Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.
Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

Caloric Intake

Because of potential underreporting, caloric and nutrient intake estimates from dietary recall surveys usually represent a lower limit of actual intakes. Also, the method of conducting dietary recall interviews has changed over the years to improve the accuracy of reporting. Reported trends in caloric and nutrient intakes may reflect these changes and must be considered when interpreting results.

Average caloric intake declined from 1,876 calories per person per day in 1977-78 to 1,807 calories in 1987-88, then rose steadily to 2,043 calories in 1995 (table 3). The percentage of Americans age 2 and older who consumed the recommended energy allowance (REA) or more rose from 22 percent in 1987-88 to 31 percent in 1995. Even so, the proportion of adults in the United States who were considered overweight in 1988-94 was more than one in three (35 percent), an increase from one in four in 1976-80.

Some of the observed increase in caloric intake may be due to increased eating out. Away-from-home food was eaten at 16 percent of all meals and snacks in 1977-78 and accounted for 18 percent of total caloric intake; in 1995, away-from-home food accounted for 27 percent of all meals and snacks and 34 percent of total caloric intake. These numbers suggest that when eating away from home, people eat either larger quantities or higher calorie foods—or both—than when eating at home.

As the number of meals and snacks eaten at fast-food places and restaurants has increased over the past two decades, so has the percentage of total calories consumed from these locations. Fast-food places accounted for 3 percent of total caloric intake in 1977-78 but 12 percent in 1995; restaurants' share of total calories was 3 percent in 1977-78 and 8 percent in 1995.

Fat and Saturated Fat

The benchmark densities for fat and saturated fat are no more than 30 and 10 percent of total calories, respectively. Over the past two decades, Americans have eaten less fatty foods. Fat provided an average of 33.6 percent of total calories in 1995, considerably less than the 41.1 percent of 1977-78. Fat density declined for both home foods (from 41.1 percent in 1977-78 to 31.5 percent in 1995) and away-from-home foods (from 41.2 percent to 37.6 percent).

Restaurant foods had a considerably higher fat density (46.2 percent) than either fast foods (41.6 percent) or school foods (40.1 percent) in 1977-78. Fat density of restaurant foods declined to 40.1 percent in 1995, fast foods to 39.3 percent, and school foods to 35.7 percent.

The saturated fat density of American diets was first measured in 1987-88. Home foods had a lower saturated fat density than away-from-home foods; this density declined in both types of

Table 3. Caloric intake and sources for Americans,[1] 1977-95

	1977-78	1987-88	1989	1990	1991	1994	1995
				Calories			
Average caloric intake	1,876	1,807	1,837	1,853	1,883	2,006	2,043
				Percent			
People consuming more than REA[2]	26	22	24	26	26	28	31
Portion of total calories:							
At home	82	73	73	74	71	69	66
Away from home[3]	18	27	27	26	29	31	34
Restaurants	3	5	7	6	6	8	8
Fast foods	3	8	9	9	9	11	12
Schools[3]	3	3	2	2	3	2	2
Other public	3	2	3	2	3	3	2
Others	6	9	7	8	9	7	9

[1]Ages 2 and older, excluding pregnant and lactating women and those who did not provide complete dietary intake data.
[2]REA = Recommended energy allowance (per day).
[3]Away from home presents the aggregate of fast foods, restaurants, schools, other public places, and others.
[4]Schools are classified as a separate category for children only; for adults, they are included in ''others.''
Compiled by Economic Research Service, USDA, from NFCS 1977-78, NFCS 1987-88, CSFII 1989-91, and CSFII 1994-95, first-day intake data.

foods through 1994. Since 1989, saturated fat density in school foods has been higher than in other away-from-home locations—14.2 percent of calories in 1995. The saturated fat density of home foods in 1995 was 10.9 percent and that for all away-from-home foods, 12.8 percent.

Cholesterol

The recommended daily cholesterol intake used to set the Daily Value for nutrition labeling is 300 milligrams (mg) or less. This recommended intake is fixed, regardless of caloric intake. In 1987-88, when cholesterol content of U.S. diets was first measured, average cholesterol intake was 286 mg per person per day. In 1995, it was 268 mg. Thus, cholesterol levels have been safely below the benchmark level. Cholesterol densities in both home (161 in 1987-88 to 129 in 1995) and away-from-home (151 in 1987-88 to 134 in 1995) foods have been markedly reduced during the past decade. Compared with all other sources, restaurant food has been consistently higher in cholesterol, with densities of 215 in 1978-88 and 176 in 1995. Males ages 12 to 39 (who tend to eat more than others yet have identical cholesterol recommendations) are those most likely to exceed the benchmark level of 300 mg per day.

Sodium

Sodium intakes as defined in the NFCS and CSFII include sodium occurring naturally in foods, as well as that added during food processing and food preparation. These intakes do not include sodium added at the table. The National Academy of Sciences recommends fewer than 2,400 mg of sodium per day, regardless of age and gender. As with cholesterol, those who consume more calories have lower benchmarks than do those consuming fewer calories.

Average daily sodium intake increased from 3,023 mg in 1987-88 to 3,348 mg in 1995. The sodium densities of home and away-from-home foods are fairly similar—both substantially higher than the benchmark density. Restaurant foods contain much more sodium than other away-from-home foods, even though some decline has been observed since 1991. Overconsumption of sodium is a problem for most consumers except for young children and elderly women who tend to consume less calories than others.

Calcium

The 1989 Recommended Daily Allowances (RDA) for calcium, used in this study, were 1,200 mg for those ages 11 to 24 and 800 mg for all others. In 1997, the Institute of Medicine of the National Academy of Sciences issued new dietary recommendations for several nutrients. The recommended calcium intakes for many Americans (children age 9 and older and adults age 25 and older) were raised.

A higher percentage of Americans met the 1989 calcium RDA in 1995 than in 1977-78. The calcium density of home foods showed a general increase, while that of away-from-home foods declined slightly. In 1995, the calcium density of away-from-home foods was 21 percent below the benchmark. School foods, however, had a calcium density 62 percent higher than home foods, 95 percent higher than fast foods, and 137 percent higher than restaurant foods.

Insufficient calcium intake is a more severe problem for teenage girls and women because of their higher calcium requirements and their lower food consumption. In 1995, only 18 percent of girls ages 12 to 17 met their calcium RDAs.

Dietary Fiber

Two separate benchmarks were used for dietary fiber: for those ages 2 to 20, ''age plus 5'' (recommended by the American Health Foundation), and for those age 21 and older, a Daily Value of 11.5 grams per 1,000 calories (recommended by the FDA). Average fiber intake increased from 12.7 grams in 1978-88 to 15.2 grams in 1995. Eighteen percent of Americans met fiber intake recommendations in 1978-88; 24 percent met the recommendations in 1995. Over the past decade, fiber densities of home foods increased slightly—from 7.5 grams per 1,000 calories in 1987-88 to 8.1 in 1995. Fiber densities for away-from-home foods increased even less—from 5.8 in 1987-88 to 6.1 in 1995. For children, school foods declined in fiber density, from 7.6 grams per 1,000 calories in 1987-88 to 7.1 in 1995. Fiber densities of fast foods trended upward but remained low at 5.6 grams in 1995. The fiber density of restaurant foods increased from 5.8 grams per 1,000 calories in 1987-88 to 6.2 grams in 1995. The increased popularity of these eating places will make it difficult for Americans to achieve fiber intake recommendations.

Dietary Iron

The RDAs for iron are 12 mg for males ages 11 to 18, 15 mg for females 11 to 50, and 10 mg for children 2 to 10. Because of the increased consumption of iron-fortified breakfast cereals at home, iron density rose more rapidly for home foods than for away-from-home foods. However, iron densities of both home and away-from-home foods increased. Since 1987-88 children's and adults' average daily consumption of dietary iron exceeded the RDAs. The percentage of children and adults who met their RDA for iron increased from 42 percent in 1977-78 to 61 percent in 1995. Iron densities of restaurant foods, school foods, and fast foods have shown an upward trend over the past two decades.

Low iron intake is common among teenage girls and women—who have the highest requirements and typically low food consumption. Only one in three women ages 18 to 39 met their iron RDAs in 1995.

Conclusion

Away-from-home foods generally contain more of the nutrients overconsumed and less of the nutrients underconsumed by Americans. The increased popularity of dining out may make it more difficult to improve the overall nutritional quality of diets. Because this trend is expected to continue, nutrition policy, educational programs, and promotion strategies could address nutritional quality of food away from home and consumers' food choices when eating out.

Food away from home does not have to differ nutritionally from food prepared at home. Consumer demand for such foods, however, must be strong enough to create an economic incentive for increased marketing of nutritious items by restaurants and fast-food establishments. Consumers may have a different attitude about food away from home than food at home. They may consider it as an occasional treat that does not have the same effect on the overall diet as food at home. Consumers may not realize the extent to which eating out has become a part of their usual diets. To the degree that consumer attitudes are a barrier to change, nutrition education and promotion strategies may be able to inform consumers of the effect of away-from-home food on overall diet quality.

Source: Lin, B-H., Frazao, E., and Guthrie, J., 1999, *Away-From-Home Foods Increasingly Important to Quality of American Diet*, Agricultural Information Bulletin No. 749, U.S. Department of Agriculture and U.S. Department of Health and Human Services.